



# CDF Operations Report

## January Shutdown

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*All Exp. Meeting*  
*Jan 27, 2003*  
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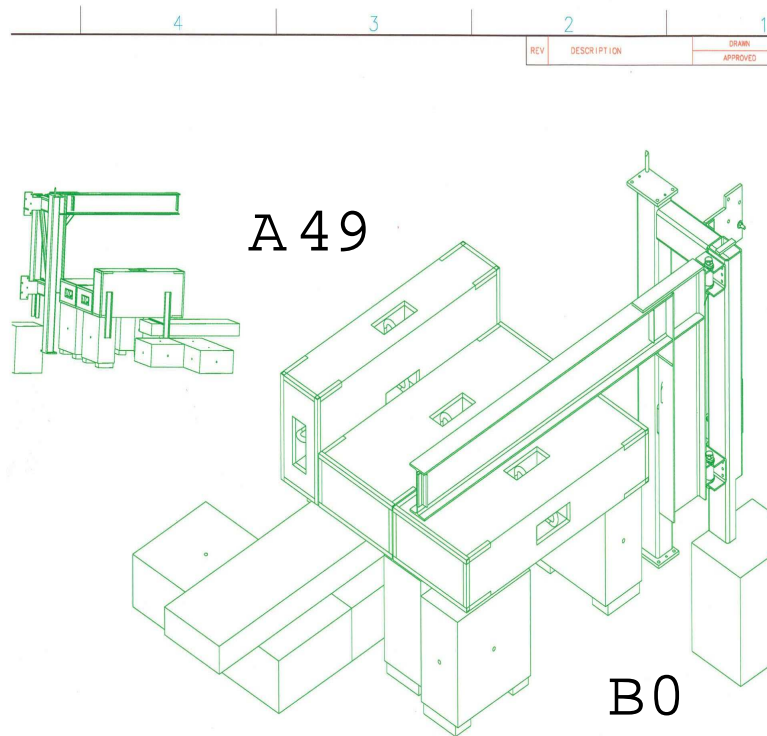
### **Major tasks :**

- **Installation of shielding around West (A-side) low beta quads.**
- **ISL Cooling work - complete opening of last epoxy blocked lines with laser.**
- **Replace photo multiplier tubes on west Cerenkov Luminosity Counter.**
- **General Maintenance**



# Shielding Plan

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A lcove Section  
(temp.p.shielding blocks)



Bridge  
Section



# Installation of shielding around West(A-side) low beta quads

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A 49



A 4900 Section  
(temp. shielding blocks)



Bridge  
Section



# ISL Cooling work

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- ISL has 34 cooling lines, in Mar '01 12 were blocked with epoxy.
- Went after 6 lines left after June '02 access.
  - 3 blocked and tough to fix because of access restrictions/limitations, thick epoxy blockages or both.
  - 3 had large temperature rise (~8-10 deg-C) from inlet to outlet.
    - problematic only for ISL Run2b rad doses
- After last Wednesday morning, only 1 blocked line left.
  - Remaining lines sufficiently opened such that the temperature rise (2-3 deg-C) is within the spec.
- The remaining blocked line is a very tough one.
  - Measurements of this line have been taken so a mock-up can be built to investigate strategies to open it up in the future.



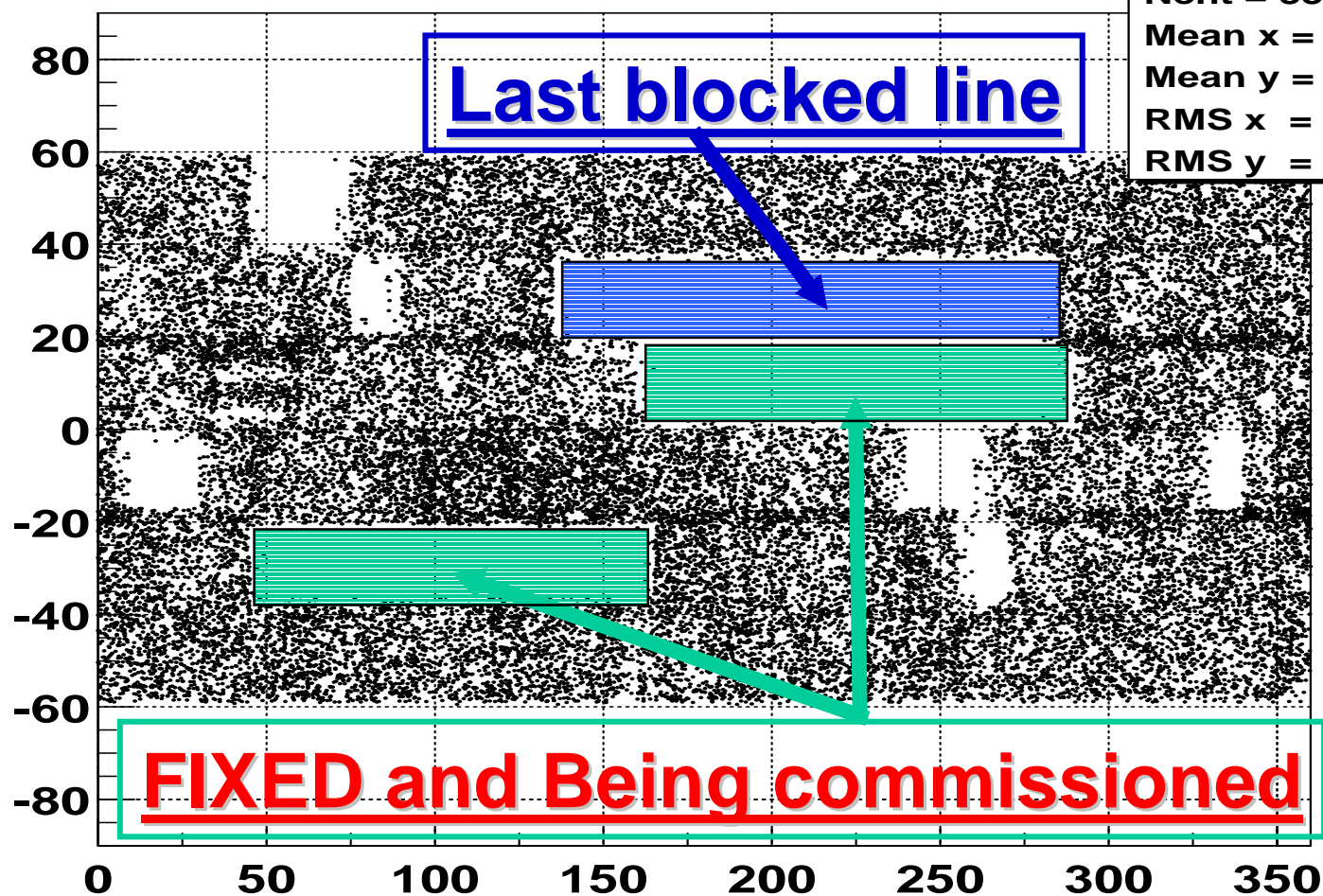
# ISL L6 coverage

Z vs Phi of hits

H2F\_0  
Nent = 33356  
Mean x = 179.8  
Mean y = -2.711  
RMS x = 108.2  
RMS y = 35.23

East

West





# Replace photo multiplier tubes on West CLC

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- **Replaced 47 of 48 PMTS on West Side**
  - Lost gain thought to be due to helium contamination
    - (0.4 ADC/day – dead by March 2003).
  - New tubes more stable
    - Rate of gain loss  $\sim 1/100$  of old tubes.
    - Will lose  $< 30\%$  of gain in  $2 \text{ fb}^{-1}$ .
  - LED gain calibration check successful
    - gains correspond to HV settings & stable
  - Leak checked – holding pressure
- **East tubes will be replaced this summer**
  - Otherwise substantial gain loss by September '03



# January Access Silicon status

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- **SuperFIB upgrade finished.**
  - Still some work going on on firmware/sequences that has nothing to do with access time - **58** in all (**38** done this access).
- **Commissioned newly cooled ISL ladders.**
- **General single point failures analysis and recovery.**
  - **Recovered a SVXII Wedge (SB2W10)**
- **L00 power supplies installed (replaced w/correct flavor).**
  - Now 11/12 supply are L00 flavor (9/12)
- **Moving SVXII CPC cooling from SVXII chiller to ISL chiller.**
- **Miscellaneous power supply work.**
  - Coping with radiation damage implied changing the scale of the Leakage current Ammeters
- **Silicon is cold, and final checkout is proceeding.**



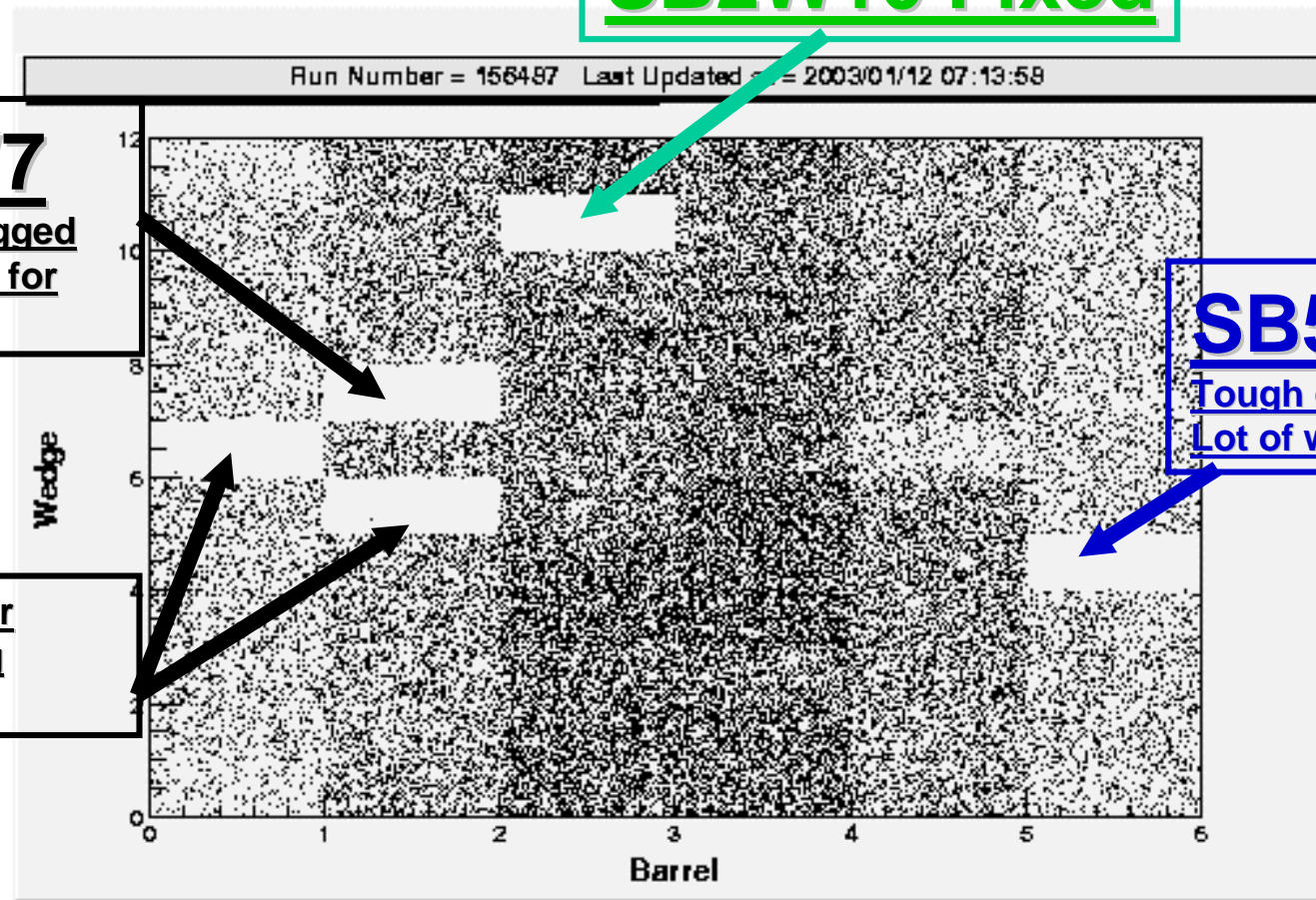
# SVXII coverage (SVT)

**SB2W10 Fixed**

**SB1W7**  
Being re-plugged  
Worth a shot for  
the offline

Single Ladder  
trouble being  
worked out

**SB5W4**  
Tough customer!  
Lot of work being done



**This plot is the last run before the shut-down**



# January Access Calorimetry Status

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- **Central Calorimeter**
  - CEM - investigated PMT gain problems (towers 2 & 3 of CEM 22E).
  - Fixed central led/xenon - Fuse replaced in dead Xef wedge 3W
- **Endwall Hadron Calorimeter**
  - Fix HV channels and PMTs
- **SMXR – Shower Max Front End Electronics**
  - Modifications in place for software reconfigurations and resets.
- **End plug calorimeter**
  - Plug sourcing calibrations – nearly done, will finish tonight.
  - Replaced caen Power Supply.
  - NW em timing project cabling work.
- **Protection diode replacement**
  - Calorimeter transition boards in ccal and pcal crates



# January Access Muon Status

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- **Central Muon Chambers - replaced power supply(7W).**
- **Central Muon Upgrade - fixing a counter & preamps**
  - top including blue beam and north wall done. 5/6 preamps on the bottom. South wall work done, counter on the top was fixed.
- **Central Muon eXtension – fixing single channel problems**
  - Work on HV in SE miniskirt & 2 problematic counters
- **TSU/BMU/BSU – fixing single channel and counter problems**
- **Controller cards for muon scintillator PMT's**
  - All removed, modified, and replaced. Change LV mon. connector and cables
  - In process of checkout.
- **Muon Calibration update.**



# January Access Trigger and L3/EVB

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- **Trigger work**
  - **Trigger Supervisor** - Readout List and other timing studies
    - speeds up readout by selectively ignoring some diagnostic banks.
  - **Level 1:** Test new Fred Firmware and preFred timing and firmware to bring in TOF and COT trigger bits. Tracking trigger work.
  - **Level 2:** Isolist studies, muon board, and dynamic prescale testing
- **L3 / Evb** (access NOT required for this work!)
  - Integrated 64 new processor nodes into the L3 farm
    - configured sub farms to balance load on the converter nodes.
  - Updated HWDB, GUI's, finished cabling, and tested the new farm.
    - 268 PC's running L3 filters + converter and output pc's
      - subdivided into 16 sub farms w/16-18 processor nodes each.



# January Access the rest...

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- **COT – front-end electronics work**
  - Fix dead and noisy channels, optical survey.
  - Check the fit of stringing engines in the bore for possible future work.
- **TOF PMT replacement - Fixed and tested ch350.**
- **PEI low voltage power supply modifications.**
- **Other maintenance work ...**
  - Miniplug and Roman Pots
    - Install miniplug transition cards, SMD boards w/squids for Roman Pot-2, and cabling work for E. and W. miniplug
  - Data acquisition system and Database(new disks and Oracle upgrade)
  - slow controls(upgrade IFIX from 2.2 -> 3.0), power supply monitoring
  - Radiation monitoring work (TLD replacement).
  - HVAC work on the 3<sup>rd</sup> floor b0 computer room.
  - ...many more jobs completed...



# Summary

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- **All major tasks on schedule have been done.**
  - A multitude of general maintenance jobs done as well.
- **Now in the process of putting things back together and performing subsystem checkouts.**
  - Doing calibrations, cosmons and high trigger rate torture tests.
  - COT is closed up, and will doing final HV checkout by Tuesday.
  - Si is cold and in the process of doing final checkout.
  - Will be closing up the end plugs (W)Tuesday and (E)Wednesday.
  - Check low beta quad alignment and power up Solenoid Wednesday
- **Everyone involved has done a great job verifying that their system comes up after they come out of the hall.**
- **We will be ready for S & S on Thursday.**